Cisco Catalyst Express 500 Series Switches

The Cisco® Catalyst® Express 500 Series Switches are a new family of fixed-configuration managed Ethernet standalone devices that provide wire-speed Fast Ethernet and Gigabit Ethernet connectivity, enabling enhanced LAN services for businesses with up to 250 employees. The Cisco Catalyst Express 500 Series offers integrated security, quality of service (QoS), and features optimized for integration with Cisco wireless LAN (WLAN), security, and IP telephony solutions.

The Cisco Catalyst Express 500 Series offers:

- Power over Ethernet (PoE): 4-port and 24-port PoE configurations provide full 15.4W simultaneously on all ports for seamless integration with Cisco IP Communications and Cisco WLAN solutions.
- Advanced network security:
  - Support for IEEE 802.1x, port security, and Secure Sockets Layer (SSL)
  - Integration with Cisco Network Admission Control (NAC) using the NAC appliance
- Optimized QoS using Cisco Smartports: Cisco Smartports roles match the appropriate class-of-service (CoS) and differentiated services code point (DSCP) values to the specific Cisco device connected to the Cisco Catalyst Express switch. This allows for trouble-free deployment of Cisco advanced technologies such as IP telephony and WLAN.
- Central management of Cisco foundation, IP telephony and WLAN solutions: In conjunction with the GUI-based Cisco Network Assistant, the Cisco Catalyst Express 500 Series allows centralized management of a Cisco small and medium-sized business (SMB) network, including Cisco Catalyst switches, integrated services routers (ISRs) and Cisco IP phones, using a single IP address. Management can be done locally or remotely, using a secure SSL connection. Cisco Network Assistant is available at no cost and is now available in localized languages (Japanese, Chinese, French, Italian, German, and Spanish).
- Limited lifetime warranty: Cisco Catalyst Express 500 Series Switches are backed for the life of the product by the Cisco Limited Lifetime Hardware Warranty.

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Configurations

Table 1 shows configurations of Cisco Catalyst Express 500 Series Switches.

Table 1. Configurations of Cisco Catalyst Express 500 Series Switches

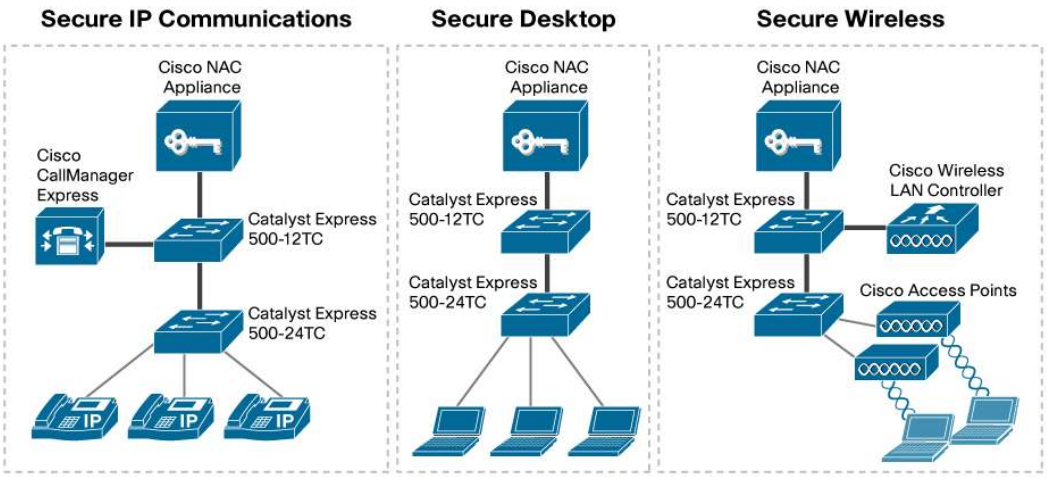
Product Name (SKU)	Description
Cisco Catalyst Express 500-24TT Switch (WS-CE500-24TT)	24 10/100 ports for desktop connectivity 2 10/100/1000BASE-T ports for uplink or server connectivity
Cisco Catalyst Express 500-24LC Switch (WS-CE500-24LC)	20 10/100 ports for desktop connectivity 4 10/100 PoE ports for desktop, wireless access point, IP telephony, or closed-circuit TV camera connectivity 2 10/100/1000BASE-T or Small Form-Factor Pluggable (SFP) ports for flexible uplink or server connectivity
Cisco Catalyst Express 500-24PC Switch (WS-CE500-24PC)	24 10/100 PoE ports for desktop, wireless, IP telephony, or closed-circuit TV camera connectivity 2 10/100/1000BASE-T or SFP ports for flexible uplink or server connectivity
Cisco Catalyst Express 500G-12TC Switch (WS-CE500G-12TC)	8 10/100/1000BASE-T and 4 10/100/1000BASE-T or SFP ports for flexible switch aggregation or server connectivity
Cisco Catalyst Express 500 Spare Rack Mount Kit (RCKMNT-CATEXP=)	Cisco Catalyst Express 500 spare Rack Mount Kit

Figure 1 shows Cisco Catalyst Express 500 Series Switches.

Figure 1. Cisco Catalyst Express 500 Series Switches

Figure 2 shows typical Cisco Catalyst Express 500 Series Switch deployment scenarios.

Figure 2. Typical Cisco Catalyst Express 500 Series Switch Deployment Scenarios



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Primary Benefits

Performance

With nonblocking, wire-speed switching on all ports, the Cisco Catalyst Express 500 Series offers 10/100 Mbps ports for desktop, wireless access point, printer, and IP phone connectivity and 10/100/1000BASE-T or SFP ports for server or backbone connectivity. With head-of-line blocking prevention, a heavily congested port will not affect performance on other ports on the switch.

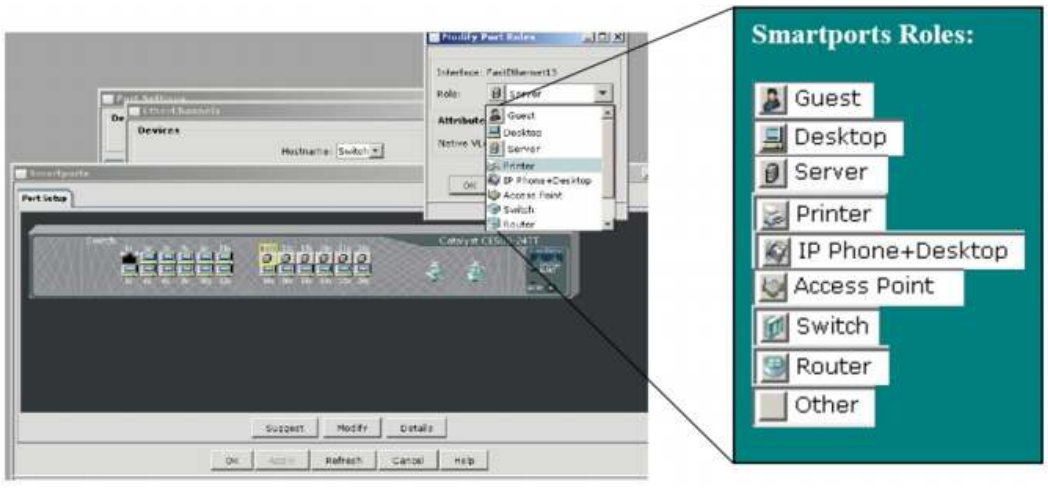
Ease of Use

The Cisco Catalyst Express 500 Series switches are designed for ease of use. The switch is initialized through the GUI Device Manager; no console cable or terminal emulation application is needed. Integrated intelligence optimizes the switch at the system level. Optimal configuration for each port can be applied by choosing from 10 preset Cisco Smartports roles. And all PoE ports can supply up to the IEEE standard maximum of 15.4W simultaneously without the need of an external power supply. There is no need to do creative power budgeting or worry about exceeding the power limit or adding an external power shelf. All ports support autonegotiation of port speed and duplex. With automatic medium-dependent interface crossover (Auto-MDIX) detection support, you do not have to worry about incorrect cable types.

Intelligence

Deploying and running an end-to-end Cisco network for up to 250 employees has never been easier. With Cisco Smartports Advisor (Figure 3), the Cisco Catalyst Express 500 Series Switches automatically discover connected Cisco devices and suggest appropriate Smartports roles. With the Smartports phone and desktop role, voice quality is guaranteed. Telephone conversations are not affected by employees sending or downloading large files. The switches also can autodetect misconfigurations and suggest corrections.

Figure 3. Smartports View



Smartports roles offer a set of verified feature templates per connection type that are easy to apply. With these templates, users can consistently and reliably configure essential security, availability, and QoS features with minimal effort and expertise. Smartports roles simplify the configuration of critical features.

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Secure

The Cisco Catalyst Express 500 Series Switches offer you layers of security to protect your business. To secure the device, management traffic to and from the GUI Device Manager can be encrypted with SSL and Simple Network Management Protocol Version 3 (SNMPv3). For network security, you can choose from three business-optimized security levels. Tight integration with Cisco Aironet® wireless access points allows you to quickly and easily deploy a secure WLAN network. With the NAC Appliance solution, the Cisco Catalyst Express 500 Series helps protect your network against worms and viruses and raises the overall security protection of your network to the next level.

Easy Monitoring and Troubleshooting

Troubleshooting is easy with the Cisco Troubleshooting Advisor, which identifies cabling problems such as wiring opens and shorts, common configuration errors, and other potential problems in your network and recommends corrective action. Graphical trend charts and an alert LED help you identify problems before they cause network outages.

Product Specifications

Table 2 gives specifications for the Cisco Catalyst Express 500 Series Switches.

Table 2. Specifications for Cisco Catalyst Express 500 Series Switches

Feature	Description
Performance	
DRAM/flash memory	32MB DRAM 16MB flash memory
Switching capacity	8.8 Gbps for Cisco Catalyst Express 500-24TT, Cisco Catalyst Express 500-24LC, and Cisco Catalyst Express 500-24PC 24 Gbps for Cisco Catalyst Express 500G-12TC
Forwarding rate	6.6-Mpps wire-speed performance for Cisco Catalyst Express 500-24TT, Cisco Catalyst Express 500-24LC, and Cisco Catalyst Express 500-24PC 18-Mpps wire-speed performance for Cisco Catalyst Express 500G-12TC
Layer 2 Switching	
Spanning Tree Protocol	Fast convergence using 802.1w, enabled by default Portfast: supported on: “Desktop,” “Phone + Desktop,” “Printer,” and “Server” Smartports roles
MAC addresses	8000 MAC addresses
Virtual LANs (VLANs)	Up to 32 VLANs (1000 range) and support for 802.1Q trunking using Cisco Smartports
Number and type of queues	4 queues per port • Shaped Round Robin (SRR) queuing • Support for DSCP and CoS using Cisco Smartports
Port grouping	Support for Cisco EtherChannel® and IEEE 802.3ad • Up to 6 groups • Up to 8 ports per group
Smartports (Preset Cisco Recommended Network Enhancements, QoS, and Security)	
Desktop	• Optimized for desktop connectivity • Configurable VLAN setting • Port security enabled to limit unauthorized access to the network
IP Phone + Desktop	• Optimized QoS for IP Phone + Desktop configurations • Voice traffic is placed on “Cisco-Voice” VLAN • Configurable data VLAN • QoS level assures Voice-over-IP (VoIP) traffic takes precedence • Port security enabled to limit unauthorized access to the network
Router	• Configured for optimal connection to a router or firewall for WAN connectivity

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Switch	• Configured as an uplink port to a backbone switch for fast convergence • Enables 802.1Q trunking
Access Point	• Configured for optimal connection to a wireless access point • Configurable VLAN
Server	Can be classified as trusted, critical, business, or standard server: • Trusted: for use with Cisco CallManager Express, same QoS setting as Voice (VoIP traffic is prioritized) • Critical: for critical servers with QoS set higher than default • Business: default setting; QoS higher than desktop Internet traffic • Standard: for servers set to same level as regular desktop Internet traffic Configurable VLAN Port security enabled to limit unauthorized access to the network
Printer	• QoS settings for “Printer” are the same as “Desktop,” “Access Point,” and “Standard Server” • Configurable VLAN • Port security enabled to limit unauthorized access to the network
Guest	• Guests are allowed access to the Internet, but not to the company network • All guest ports are placed on the “Cisco-Guest” VLAN • Port security enabled to limit unauthorized access to the network
Other	• “Other” Smartports role allows for flexible connectivity of nonspecified devices • Configurable VLAN • No security • No QoS policy
Diagnostic	Customers can connect diagnostics devices to monitor traffic on other switches (configurable using Cisco Network Assistant only)
Security	
SSL	SSL support: encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
Security policy slider	Three security levels: low, medium, and high (configurable using Cisco Network Assistant only): • Low: for business environments where there is limited guest access; limited number of devices are allowed per port • Medium: for business environments where security is important; only authorized devices (by MAC address) are allowed on the company network • High: for business environments where security is critical; only authorized devices (by MAC address) and authenticated users (using IEEE 802.1x) are allowed on the company network
Multicast	• High-bandwidth video traffic is optimized so that it does not affect other applications on the network. • Internet Group Management Protocol (IGMP) (v1, v2, and v3) snooping: IGMP snooping constrains multicast traffic at Layer 2 by configuring Layer 2 LAN ports dynamically to forward multicast traffic only to those ports that want to receive it.
Product Specifications	
Inline power (PoE)	• All 24 PoE ports on the Cisco Catalyst Express 500-24PC can supply up to 15.4W (IEEE 802.3af standard maximum) of power over Category 5 cable, for a total of 370W of inline power. • All 4 PoE ports on Cisco Catalyst Express 500-24LC switches can supply up to 15.4W of power over Category 5 cable, for a total of 62W of inline power. • Both the IEEE 802.3af PoE standard and Cisco prestandard inline power are supported.
Supported SFPs	• 100BASE-BX-10D • 100BASE-BX-10U • 100BASE-FX-FE • 100BASE-FX-GE • 100BASE-LX • 1000BASE-LX/LH • 1000BASE-SX

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Standards and Cisco features supported	• Broadcast suppression • Cisco Discovery Protocol Version 2 • IEEE 802.1d Spanning Tree Protocol • IEEE 802.1p CoS classification • IEEE 802.1q VLAN • IEEE 802.1w Rapid Convergence Spanning Tree Protocol • IEEE 802.1x Port Access Authentication • IEEE 802.3ad Link Aggregation Control Protocol (LACP) • IEEE 802.3af PoE • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports • IEEE 802.3 10BASE-T • IEEE 802.3u 100BASE-T/TX • IEEE 802.3ab 1000BASE-T • IEEE 802.3z 1000BASE-X • IGMP (v1, v2, and v3) snooping • Per VLAN Spanning Tree • Per VLAN Spanning Tree Plus • Per VLAN Rapid Spanning Tree Plus • PortFast • RADIUS • SSL • SNMPv3 • UDLD • VLAN Trunking Protocol (VTP)* (transparent mode only)
Management	• RFC1213-MIB (MIB II) • RMON-MIB (statistics, history, alarms, and events groups only) • CISCO-PRODUCTS-MIB • CISCO-SYSLOG-MIB • CISCO-ENVMON-MIB • BRIDGE-MIB • ENTITY-MIB • ETHERNET-MIB • E-911 MIB support • IF-MIB • Device Manager: device-level GUI • Embedded GUI • Available in localized languages: Japanese, Chinese, French, Italian, German, and Spanish • Cisco Network Assistant: network management tool • Free download at www.cisco.com/en/US/products/ps5931/index.html • Available in localized languages (Coming in Q3 2006): Japanese, Chinese, French, Italian, German, and Spanish
Connectors and cabling	• 10/100BASE-TX ports: RJ-45 connectors; 2-pair Category 5 unshielded twisted pair (UTP) cabling • 10/100/1000BASE-T ports: RJ-45 connectors; 4-pair Category 5 UTP cabling • 1000BASE-SX, 1000BASE-LX/LH, 100BASE-FX, 100BASE-LX, and 100BASE-BX-based ports: LC fiber connectors (single-mode or multimode fiber)
Physical specifications	Dimensions (H x W x D): • 1.73 x 17.5 x 9.9 in. (4.39 x 44.45 x 25.15 cm) for Cisco Catalyst Express 500-24TT, Cisco Catalyst Express 500-24LC, and Cisco Catalyst Express 500G-12TC • 1.73 x 17.5 x 14.4 in. (4.39 x 44.45 x 36.58 cm) for Cisco Catalyst Express 500-24PC Weight: • 8 lb (3.7 kg) for Cisco Catalyst Express 500-24TT, Cisco Catalyst Express 500-24LC, and Cisco Catalyst Express 500G-12TC • 12 lb (5.5 kg) for Cisco Catalyst Express 500-24PC

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<table>
<tr><td>Power requirements</td><td>Switch Model
Cisco Catalyst Express 500-24TT
Cisco Catalyst Express 500-24LC
Cisco Catalyst Express 500-24PC
Cisco Catalyst Express 500G-12TC</td><td>Power consumption (maximum):
30W or 102 BTU per hour
110W or 375 BTU per hour
460W or 1570 BTU per hour
45W or 154 BTU per hour</td><td>Power dissipation:
30W
45W
90W
45W</td></tr>
<tr><td></td><td colspan="3">AC input voltage:

Catalyst Express 500-24TT:
100 to 240 VAC, 1.3–0.8 A (autoranging), 50 to 60 Hz
Catalyst Express 500-24LC:
100 to 240 VAC, 2–1 A (autoranging), 50 to 60 Hz
Catalyst Express 500-24PC:
100 to 240 VAC, 8–4 A (autoranging), 50 to 60 Hz
Catalyst Express 500G-12TC:
100 to 240 VAC, 1.3–0.8 A (autoranging), 50 to 60 Hz</td></tr>
<tr><td>Environmental requirements</td><td colspan="3">Operating temperature: 32 to 113ºF (0 to 45ºC)
Storage temperature: -13 to 158ºF (-25 to 70ºC)
Operating relative humidity: 10 to 85% (noncondensing)
Operating altitude: up to 10,000 ft (3000m)
Storage altitude: up to 15,000 ft (4500m)</td></tr>
<tr><td>Predicted mean time between failure (MTBF)</td><td colspan="3">308,482 hours or 35 years for Cisco Catalyst Express 500-24TT
282,705 hours or 32 years for Cisco Catalyst Express 500-24LC
211,167 hours or 24 years for Cisco Catalyst Express 500-24PC
289,193 hours or 33 years for Cisco Catalyst Express 500G-12TC</td></tr>
<tr><td>Acoustic noise</td><td colspan="3">ISO 7770, bystander position: operating to an ambient temperature of 30ºC
Cisco Catalyst Express 500-24TT, Cisco Catalyst Express 500-24LC, Cisco Catalyst Express 500G-12TC: 40dBa, Cisco Catalyst Express 500-24PC: 48dBa</td></tr>
<tr><td colspan="4">Regulatory Agency Approvals</td></tr>
<tr><td>Safety certifications</td><td colspan="3">UL to UL 60950-1
CUL to CAN/CSA C22.2 No. 60950-1
TUV/GS to EN 60950-1
CB to IEC 60950-1 with all country deviations
NOM to NOM-019-SCFI
CE marking</td></tr>
<tr><td>Electromagnetic compatibility certifications</td><td colspan="3">FCC Part 15 Class A
EN 55022 Class A (CISPR22)
EN 55024 (CISPR24)
VCCI Class A
AS/NZS CISPR22 Class A
MIC
China EMC requirements
GOST</td></tr>
</table>

Service and Support

Cisco is committed to minimizing total cost of ownership. The company offers a portfolio of technical support services to help ensure that its products operate efficiently, remain highly available, and benefit from the most up-to-date system software. The services and support programs described in Table 3 (SMARTnet®) and Table 4 (SMBSA) are available as part of the Cisco Catalyst Express 500 Service and Support solution and are available directly from Cisco and through resellers.

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Table 3. SMARTnet Service and Support Programs

Service and Support	Features	Benefits
• Cisco SMARTnet, available direct from Cisco • Cisco Packaged SMARTnet support program, available through resellers	• Access to software updates 24 hours a day • Web access to technical repositories • Telephone support through the Cisco Technical Assistance Center (TAC) • Advance replacement of hardware parts	• Supplements existing staff • Helps ensure that functions meet needs • Mitigates risk • Helps enable proactive or expedited issue resolution • Lowers total cost of ownership by using Cisco expertise and knowledge • Helps minimize network downtime

Table 4. SMBSA Service and Support Programs

Service and Support	Features	Benefits
• Cisco SMB Support Assistant direct from Cisco • Packaged Cisco SMB Support Assistant support: available through resellers • 24x7 service request (case): SMB Technical Assistance Center (TAC) engineers will respond within one business day during normal business hours	• Next business day advance replacement of hardware, where available; otherwise same day ship. • Management tools designed for SMBs: startup and configuration assistance, basic health checks and troubleshooting, inventory and contract management	• Lowers cost of ownership by using Cisco expertise and knowledge • Minimizes network downtime

Limited Lifetime Hardware Warranty:

For details about the Cisco Catalyst Express 500 Series Limited Lifetime Hardware Warranty, visit http://www.cisco.com/en/US/products/prod_warranties_item09186a00800e6e6e.html.

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